

**CRYSTALLIZABLE GLASS AND THE USE THEREOF FOR PRODUCING
EXTREMELY RIGID AND BREAK-RESISTANT GLASS CERAMICS
HAVING AN EASILY POLISHED SURFACE**

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C L A I M S

1. Crystallizable glass of magnesium-containing aluminosilicate type for producing highly rigid, break-resistant glass ceramics with a modulus of elasticity of > 110 GPa, characterized in that it contains
- 10 5 - 33 wt.% of SiO_2
25 - 40 wt.% of Al_2O_3
5 - 25 wt.% of MgO
0 - 15 wt.% of B_2O_3
15 0.1 - 30 wt.% of Y_2O_3 , Ln_2O_3 , As_2O_3 and/or Nb_2O_5
0.1 - 10 wt.% of P_2O_5 .
2. Glass according to claim 1, characterized in that it has an alkali content of < 2 wt.%.
- 20 3. Glass according to one of the preceding claims, characterized in that it contains transition metal oxides in a maximum amount of 10 wt.%.
- 4, Glass according to claim 3, characterized in that the transition metal oxides are MnO_2 , Fe_2O_3 , NiO , CoO , Cr_2O_3 , V_2O_5 , MoO_3 or WO_3 .
- 25 5. Glass according to one of the preceding claims, characterized in that it contains 0 - 5 wt.% of CaO , 0 - 5 wt.% of SrO and/or 0 - 5 wt.% of BaO .
6. Glass according to one of the preceding claims, characterized in that it contains
- 30 0 - 12 wt.% of TiO_2 , 0 - 10 wt.% of ZrO_2 and/or 0 - 20 wt.% of ZnO .

7. Glass according to one of the preceding claims obtainable by annealing at a temperature that is 5 - 50 °C above the T_g for two minutes to one hour.
- 5 8. Glass ceramic obtainable by heating a glass according to one of claims 1 - 7.
9. Use of the glasses according to one of claims 1 - 7 for producing a glass ceramic.
- 10 10. Use according to claim 9, characterized in that the glass is heated in accordance with holding curves determined by differential thermal analysis until the crystalline phases have precipitated.
- 15 11. Use according to claim 9 or 10, characterized in that to form primary nuclei the glass is heated for at least 30 minutes at a first nucleation temperature and then for at least 30 minutes at a second, main crystallization temperature at which on the primary nuclei there are formed crystal phases of the spinel, sapphirine and/or cordierite classes and that optionally, to form crystal phases of the xenotime (YPO₄), yttrium pyrosilicate (Y₂Si₂O₇), yttrropyrochlore (Y₂Ti₂O₇) and/or rutile (TiO₂) classes, the material is heated at a higher temperature for at least 0.5 hour.
- 20 12. Use according to claims 9 - 11 to prepare magnetic storage disks, magneto-optical storage devices and mirror carriers.